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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	ET Docket No. 92-100
DIAL PAGE, INC.	)	RM-7977
MOBILE TELECOMMUNICATION TECHNOLOGIES CORPORATION	)	RM-7978
PACTEL PAGING	)	RM-7979
PACTEL PAGING	)	RM-7860
PAGEMART, INC.	)	RM-7980
	)	

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COMMENTS OF MOBILE TELECOMMUNICATION TECHNOLOGIES CORPORATION

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TECHNOLOGIES CORPORATION

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SUMMARY

During the past year, the Commission has received numerous petitions proposing to utilize 930-931 MHz frequencies for a wide variety of new messaging services. Mtel, for example, has requested that three 50 kHz channels be made available for a new Nationwide Wireless Network ("NWN") service. Others have suggested a range of additional offerings that include two-way data, acknowledgement paging, advanced architecture paging, facsimile, and wireless network access capabilities.

In response to the industry's broad based interest in the 930-931 MHz band, the Office of Engineering and Technology ("OET") has invited public comment on several of these proposals as well as their related pioneer preference requests. Mtel believes that the pending petitions and the ensuing comments will provide a sound basis for promptly issuing a Notice of Proposed Rulemaking. In such respects, Mtel's NWN submission sets forth detailed proposed rules that could provide a sound foundation for the creation and licensing of new advanced technology messaging services.

In order to ensure efficient and technologically advanced uses of the 930-931 MHz band, Mtel suggests that several principles should govern the Commission's response to the various claims for spectrum. First, the proposed services should employ next generation messaging capabilities rather than simply replicating existing paging operations. Second, the proposed services should contemplate a highly efficient use of spectrum to maximize the opportunities for competition and diversity in services -- any request for more than 50 kHz per licensee should carry a heavy burden of justification. Third, the Commission should employ minimal and flexible service rules consistent with non-interference and Table of

Allocations requirements. In this manner, the Commission can ensure that services authorized in the 930-931 MHz band are advanced technology services designed to bring consumers innovative new capabilities.

Within the context of the general principles outlined above, Mtel believes that the following specific regulatory approaches should be pursued in adopting licensing and service rules to govern offerings in the 930-931 MHz band:

- Spectrally efficient services should be given licensing preferences over other proposals.
- Services should be provided on a competitive basis with multiple service providers.
- Services should add functionality to available services.
- AMS licensees should be permitted to self-designate their regulatory status as private carriers or common carriers.
- Maximum power limitations of 3,500 watts per base transmitter and 7 watts per mobile transmitter are appropriate.
- Emission masks should limit total out-of-band emissions, but may be tailored to the various power levels ultimately authorized.
- Strict anti-speculation and anti-trafficking rules must be adopted and enforced.
- Licensing procedures should favor highly qualified and experienced applicants rather than relying on the random selection of lotteries.

Mtel has tailored its rules, originally included as Appendix C to its NWN petition, to effectuate these objectives within the broader AMS context. These proposed rules have been attached as Exhibit A for the Commission's consideration.

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COMMENTS OF MOBILE TELECOMMUNICATION TECHNOLOGIES CORPORATION

Mobile Telecommunication Technologies Corporation ("Mtel"), by its attorneys, hereby submits its comments on the above-captioned petitions for rulemaking to establish advanced messaging services ("AMS") in the 930-931 MHz band.[1] As detailed below, Mtel believes that these requests provide a sound basis for promptly issuing a Notice of Proposed Rulemaking to establish AMS rules and policies. In particular, the Commission should adopt

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[1] Petitions for Rule Making Filed, *Public Notice*, Mimeo No. 22912 (April 30, 1992). *See also Dial Page, Inc. Petition for Rulemaking for Amendment of the Table of Frequency Allocations and Part 22 of the Rules Relative to the Allocation of Reserve Spectrum for a Common Carrier Acknowledgement Paging Service*, RM-7977 (filed October 11, 1991) ["*Dial Page APS Petition*"]; *Mobile Telecommunication Technologies Corporation Petition for Rulemaking to Allocate 150 kHz in the 930-931 MHz Band and To Establish Rules and Policies for a New Nationwide Wireless Network (NWN) Service*, RM-7978 (filed November 12, 1991) ["*Mtel NWN Petition*"]; *PacTel Paging Petition for Rulemaking for Amendment of the Table of Frequency Allocations and Part 22 of the Rules Relative to the Allocation of Reserve Spectrum for a Common Carrier Advanced Architecture Paging Service*, RM-7979 (filed August 2, 1991) ["*PacTel AAP Petition*"]; *PacTel Paging Petition for Rulemaking for Amendment of Parts 2 and 22 of the Commission's Rules to Provide for a Land-Based Common Carrier Ground-to-Air Paging Service in the 930 to 931 MHz Band*, RM-7860 (filed October 15, 1991) ["*PacTel GAP Petition*"]; and *Pagemart, Inc. Petition for Rulemaking to Allocate 800 kHz in the 930-931 MHz Band and To Establish Rules and Policies for a New Nationwide and Local Personal Information Messaging Service (PIMS)*, RM-7980 (filed February 28, 1992) ["*PageMart PIMS Petition*"].

flexible rules that ensure efficient use of spectrum and promote rapid deployment of advanced technologies within a pro-competitive regulatory framework.

I. INTRODUCTION

Mtel and its corporate predecessors consistently have been international pioneers at the forefront of messaging developments. In keeping with this tradition, on November 21, 1991, Mtel filed a petition for rulemaking proposing the use of three 50 kHz channels in the 930-931 MHz band for a new Nationwide Wireless Network ("NWN") service.[2] Mtel's NWN service proposed use of innovative enhanced modulation techniques and an innovative advanced dynamic frequency management scheme to provide highly efficient two-way messaging capabilities for laptop, palmtop, and other portable computing devices. At the same time, Mtel filed a request for a pioneer's preference to recognize innovations that Mtel developed to implement this ground breaking new service.[3]

Mtel's prior filings describe its extensive experience in designing, constructing, and operating high technology wireless communications services.[4] In particular, Mtel and its

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[2] Mobile Telecommunication Technologies Corporation Petition for Rulemaking to Allocate 150 kHz in the 930-931 MHz Band and to Establish Rules and Policies for a New Nationwide Wireless Network (NWN) Service at 1-4, ET Docket No. 92-100, RM-7978 (filed November 21, 1991) (proposing to allocate three 50 kHz channels for competitive NWN carriers) ["*NWN Petition*"].

[3] Mobile Telecommunication Technologies Corporation Request for a Pioneer's Preference Regarding its Petition for Rulemaking to Allocate 150 kHz in the 930-931 MHz Band and to Establish Rules and Policies for a New Nationwide Wireless Network (NWN) Service at 2-3, ET Docket No. 92-100, PP-37 (filed November 21, 1991) ["*NWN Preference Request*"].

[4] *NWN Petition* at 1-4, *NWN Preference Request* at 2-3.

subsidiaries hold licenses in the nationwide paging service,[5] the public air-to-ground service, the specialized mobile radio service, various marine radio services, and have an ownership interest in a domestic mobile satellite service venture.[6] Mtel and its corporate predecessors have over five years of experience as nationwide system operators and over fifteen years of experience as wide area system operators. Mtel's recent accomplishments include the first 2,400 bps simulcast messaging technology[7] and providing nationwide one-way wireless electronic mailbox ("e-mail") service to AT&T Safari™ computers and HP-95LX computers through the SkyTel™ network.[8]

Mtel's experience has provided it with extensive insight into developing radio services designed to respond to consumer needs and provided it with access to a wide range of technological solutions to bring concepts into reality. NWN embodies Mtel's experience as a designer and operator of advanced technology systems. It is at once a crafted response to significant demand and a service that can be deployed economically and rapidly.

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[5] Mtel's subsidiary, SkyTel, Inc. ("SkyTel™"), was awarded the first nationwide paging license at 931.9375 MHz. At that time, three construction permits for nationwide paging were awarded but Mtel was the first licensee and the only one of the three that successfully built and launched a nationwide paging service.

[6] Mtel is a major shareholder in the American Mobile Satellite Corporation ("AMSC"), the consortium licensed by the Commission to provide mobile satellite service in the United States. AMSC's mobile satellite service will provide a full range of advanced, high technology land, maritime and aeronautical communications services, including public safety services.

[7] *See Telocator Bulletin*, Vol. 91 No. 32, p. 2 (August 11, 1991).

[8] In this service, AT&T's Easylink™ electronic mail service is linked to SkyTel™ via a gateway and permit users to send mail to computers equipped with a low cost adapter. Although somewhat analogous to the proposed NWN service in terms of ease of use and area of operation, NWN will be a fully two-way service, unlike the one-way service currently offered.

II. THE PUBLIC WOULD BENEFIT EXTENSIVELY IF THE COMMISSION PROMPTLY RELEASED 930-931 MHz FOR ADVANCED MESSAGING SERVICES

On January 23, 1991, Telocator filed a Petition for Rulemaking requesting the allocation of the advanced technology paging reserve band for AMS.[9] Subsequently, Mtel and seven other petitioners have filed proposals for new messaging services in that band. Collectively, these filings document an immense consumer and business demand for next generation messaging services and evince an industry commitment to bring the benefits of advanced messaging to market rapidly. With the Commission's recent actions soliciting comment on existing proposals and cutting off new pioneer preference requests,[10] the procedural foundation has been laid for the Commission to issue promptly a Notice of Proposed Rulemaking to adopt service rules for the 930-931 MHz band.

Importantly, the 930-931 MHz band is already allocated for advanced technology paging services.[11] As all of the petitioners have noted, the FCC prudently established a 1 MHz reserve band in order to accommodate new advanced technology applications at the same time it released 929-930 MHz for private carrier paging and 931-932 MHz for common

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[9] *See* Petitions for Rulemaking Filed, *Public Notice*, Report No. 1836 (February 7, 1991); *Telocator Petition for Rulemaking to Amend Part 22 of the Commission's Rules Concerning the Use of 930-931 MHz for an Advanced Messaging Service*, RM-7617 (filed January 23, 1991).

[10] *See* Petitions for Rulemaking Filed, *Public Notice*, Mimeo No. 22914 (April 30, 1992) (soliciting comment on 930-931 MHz petitions); Requests for Pioneer's Preferences Filed, *Public Notice*, Mimeo 22915 (April 30, 1992) (soliciting comments on pioneer's preferences); Deadline To File Pioneer's Preference Requests 900 MHz Narrowband Data and Paging Service (ET Docket No. 92-100), *Public Notice*, Mimeo 22922 (April 30, 1992) (establishing June 1, 1992, cut-off for 930-931 MHz pioneer's preference requests). Mtel is submitting today, under separate covers, its comments on the noticed pioneer's preference requests ["*Mtel Preference Comments*"] and a technical feasibility demonstration ["*Mtel Technical Feasibility Demonstration*"].

[11] *928-941 MHz Allocation Order*, 89 F.C.C.2d 1337 (1982).

carrier paging.[12] As a paging allocation between two other paging allocations, this 1 MHz reserve band is technically ideal for AMS, allowing carriers to leverage the existing base of equipment manufactured for this spectrum range and to design systems with coverage and penetration characteristics familiar to users of existing wide-area paging systems. Thus, AMS use of the paging reserve band is consistent with the Commission's original allocation goals, even if the specific technology of these "next generation" services goes well beyond what could have been contemplated at the time the reserve was established.

The broad-based interest in opening up this spectrum shows that enormous benefits can be derived immediately from releasing the reserve band. Mtel, for example, requested an allocation of 150 kHz for three nationwide wireless network ("NWN") service providers. NWN will permit high-speed two-way transmission of digital data between small portable computers and computers on the landline network as well as other portable computers. NWN will use a single 50 kHz channel in simplex mode to provide two-way operations, employing high-power enhanced multitone modulation simulcast techniques to achieve base-to-mobile throughput rates up to 24,000 bits per second. Notably, this data rate is *20 times faster* than most existing simulcast paging systems, which operate at 1,200 bits per second.[13] Mobile-to-base transmissions, in contrast, are low-powered, and use an intelligent scheduling system to provide considerable overall throughput for the return channel. Mtel's

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[12] *Mtel NWN Petition* at 18; *Dial Page APS Petition* at 9-10; *PacTel AAP Petition* at 12; *PacTel GAP Petition* at 17; *PageMart PIMS Petition* at 17.

[13] Most existing simulcast paging systems operate at rates of 1200 bits per second or less. During 1991 Mtel pioneered the development of 2400 bps technology for the industry. Mtel is currently deploying this technology for its SkyTel™ network. NWN will also operate at a faster data rate than the forthcoming European Radio Messaging System ("ERMES"), which will deliver data at 6,250 bps. Mtel is participating in the implementation of ERMES through its United Kingdom subsidiary.

calculations indicate that a single mature -- but not fully developed -- NWN system operating at 24,000 bits per second could provide needed data transmission services to over 800,000 customers.[14]

The Commission has also received numerous other petitions for new services focusing on different aspects of the marketplace. To date, these petitions include:

- ***Acknowledgement Paging Service.*** Dial Page, Inc. ("Dial Page") has requested allocation of 75 kHz to permit three operators to provide regional Acknowledgement Paging Service ("APS"). APS will allow a pager user to immediately acknowledge receipt of a page.

- ***Advanced Architecture Paging.*** PacTel Paging, Inc. ("PacTel") has petitioned the Commission to allocate all 930-931 MHz spectrum unused by AMS for regional Advanced Architecture Paging ("AAP") services. AAP offers an unformatted digital data stream on either 25 or 50 kHz channels suitable for a number of applications.

- ***Ground-to-Air Paging.*** PacTel also has requested the Commission to allocate three 25 kHz channels for regional Ground-to-Air Paging ("GAP") services. GAP is intended to extend the benefits of conventional paging to subscribers in transit on airplanes.

- ***Mobile Data Radio Service.*** Echo Group, L.P. ("Echo") has proposed a Mobile Data Radio Service ("MDRS") that will allow the two-way exchange of digital data among laptops, notebook computers, and fixed computers. Echo has requested allocation of 300 kHz for 6 nationwide MDRS providers.[15]

- ***Personal Information Messaging Service.*** PageMart, Inc. ("Pagemart") has requested an allocation of 800 kHz to allow two nationwide and two local providers to offer Personal Information Messaging Services ("PIMS"). PIMS would allow real-time two-way communications between mobiles and the landline network.

- ***Personal Network Access Communications.*** NAC, Inc. ("NAC") has proposed to use 250 kHz in the 901-902, 930-931, or 940-941 MHz bands to provide a Personal Network Access Communications Service ("P*NAC"). P*NAC will provide person-

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[14] *See Mtel Technical Feasibility Demonstration* at Exhibit D.

[15] *See* Petitions for Rulemaking Filed, *Public Notice*, Rpt No. 1858 (August 26, 1991); *Echo Group, L.P. Petition for Rulemaking to Amend Section 2.106 of the Commission's Rules to Create a New Mobile Data Radio Service ("MRDS") in the 930-931 MHz Band*, RM-7782 (filed July 30, 1991).

to-person signaling while using the existing telecommunications networks for voice communication.[16]

- ***Public Facsimile Broadcast Service.*** Edwards/Montauk Telecommunications Co. ("Montauk") has proposed a Public Facsimile Broadcast Service ("PFBS") using the 930-931 MHz band, the air-to-ground band, or vacant 929-930 MHz private carrier paging channels. Montauk has indicated that the 930-931 MHz band is preferable, however, since it is requesting one local and two nationwide 25 kHz channels for PFBS operations.[17]

With some exceptions, these petitions remain true to the ideal of AMS as the next generation of messaging services by improving upon the capabilities of existing paging networks and offering more than simply data transmission to compact pager-sized devices.

The Mtel and other proposals show that, from a regulatory perspective, remarkable advances in messaging can be brought to the public quickly and simply. Unlike many other proposals requiring relocation of existing users and reallocation of spectrum, the 930-931 MHz band is already allocated and all that is required to launch AMS is the adoption of service rules. In order to facilitate that process, Mtel has proposed rules that could serve as a framework to accommodate the different services described in the pending petitions.

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[16] *See* Pioneer's Preference Requests Accepted in GEN Docket 90-314 (November 27, 1991); *Request by NAC, Inc. For Grant of a Pioneer's Preference for its Personal Communications Service*, PP-14 (filed July 30, 1991).

[17] *See* Petitions for Rulemaking Filed, *Public Notice*, Rpt. No. 1853 (July 19, 1991); *FAX-MAX Services Co. Petition for Rulemaking for Creation of a New Radio Service "Public Facsimile Broadcast Service" and Allocation of Spectrum Therefor*, RM-7760 (filed May 22, 1991) ["*Montauk PFBS Petition*"]. Edwards/Montauk Telecommunications, Inc. was previously known as "FAX-MAX Services Co.").

III. THE COMMISSION SHOULD EMPLOY SEVERAL BASIC PRINCIPLES IN EVALUATING THE REQUESTS FOR 930-931 MHz SPECTRUM

The Commission has received a broad range of service proposals requesting 930-931 MHz spectrum, each promising substantial benefits to the public. While the advanced paging reserve spectrum can accommodate almost all of the requests that are currently pending, the spectrum at 930-931 MHz is nonetheless limited. Several basic principles should be employed in winnowing out less meritorious proposals and minimizing duplicative service concepts. First, the services authorized in this band should be next generation messaging systems rather than extensions of current operations into new bands. Second, spectrum efficient proposals should be preferred in order to maximize competitive entry and service diversity for consumers. Third, strict service definitions should be eschewed in favor of minimal regulation and service flexibility consistent with non-interference and Table of Allocations considerations.

Advanced Messaging Services Should Offer Enhanced Capabilities. Services deployed in the advanced technology paging reserve should offer more than currently available paging service. At a minimum, such services should add functionality above and beyond existing services. By requiring some enhancement over existing services -- whether adding two-way capability, adding coverage where not previously contemplated, or enabling a new application -- the Commission could minimally guarantee that services deployed on 930-931 MHz spectrum are "advanced technology" services.

Advanced Messaging Services Must Be Efficient To Maximize Entry Opportunities. Mtel also believes that the Commission should endeavor to maximize entry opportunities and

promote a diverse range of new services. In order to achieve this goal, spectrum efficiency should be preferred. In particular, the vast majority of petitions show that a 50 kHz channel can serve enormous consumer needs. Mtel's modeling, for example, estimates that a mature NWN system operating at 24,000 bits per second could support over 800,000 customers' data transfer needs on a 50 kHz channel.[18] Larger spectrum requests with lesser ability to accommodate customers may be indicative of inefficient technologies or technological approaches that are more appropriate for licensing in other bands. Historically, paging has been characterized by accommodating an extremely large base of users in relatively small channels. As some of the pending proposals aptly illustrate, cell-based frequency re-use systems consume vast amounts of spectrum in order to provide a reasonable level of service.[19] The larger channelization required for some microcellular systems are not well suited for licensing in a limited 1 MHz allocation.[20] For those services, allocation of spectrum in the Emerging Technology bands may be appropriate. At a minimum, the Commission should place a heavy burden on those proposals seeking allocations of more than 50 kHz per provider.

Advanced Messaging Services Should Not Be Constrained By Formalistic Definitions. As a final matter, Mtel believes that it would unduly constrain innovation to adopt stringent and overly technical service definitions for AMS. Instead, the Commission

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[18] *See Mtel Technical Feasibility Demonstration* at Exhibit B.

[19] Mtel, in Appendix B to its Petition for Rulemaking, compared the relative spectral efficiency of simulcast systems like NWN and those requiring orthogonal frequency assignments to deploy cell-based systems.

[20] PageMart's petition requesting 800 kHz for PIMS would virtually preclude grant of any other petition in the 930-931 MHz band.

should adopt minimal regulations designed to maximize licensees' flexibility to deploy available technologies consistent with non-interference and the Table of Allocations.[21] Since 930-931 MHz is a land mobile allocation between two other land mobile allocations, the rules described *supra* governing interference between AMS licensees should also guarantee coexistence between AMS and adjacent services.[22]

IV. THE COMMISSION SHOULD ADOPT LICENSING RULES FOR 930-931 MHz THAT PROMOTE COMPETITION, DETER SPECULATION, AND ENSURE LICENSES ARE AWARDED TO COMMITTED, EXPERIENCED APPLICANTS

The Commission has the ability to bring substantial benefits to the public rapidly through the simple expedient of adopting service rules for the 930-931 MHz band. In adopting service rules for the 930-931 MHz band, Mtel believes the Commission should proceed consistent with several fundamental principles:

- ***AMS Rules Should Encourage Spectrum Efficiency.*** In order to encourage more efficient use of valuable spectrum resources, AMS rules should be crafted to offer incentives to providers that make demonstrably more efficient use of spectrum.

- ***AMS Rules Should Promote Competition.*** Services authorized in the 930-931 MHz band should be provided on a competitive basis with multiple entry opportunities.

- ***AMS Rules Should Mandate Enhanced Messaging Capabilities.*** In order to avoid using AMS frequencies for services that could be deployed on existing paging channels, the AMS rules should require spectrum applicants to demonstrate affirmatively that their proposal offers messaging capabilities that are not currently available.

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[21] 47 C.F.R. § 2.106 (1991).

[22] In contrast, one of the pending proposals contemplates a service providing point to multipoint service to the public at large, and thus appears to be a broadcast service. *See Montauk PFBS Petition.* Broadcast services would not fit within the existing Table of Allocations for this band.

- ***Licensees Should Have the Right to Self-Designate Their Regulatory Status.*** New AMS licensees should be allowed to "self designate" whether they will be a private carrier or common carrier.

- ***Power Limits Should Permit Use of Diverse Technologies.*** Innovation in designing new services for the 930-931 MHz band should encouraged by providing maximal power limits for AMS base stations and mobiles that allow licensees to utilize any suitable technology for services ultimately deployed.

- ***AMS Rules Should Provide Flexible Standards for Out-of-Band Emissions.*** In order to avoid "locking in" specific technologies for AMS services, the Commission should employ flexible emissions masks based on the output power needed to implement a specific service.

- ***AMS Rules Should Discourage Speculation.*** The service and licensing rules for 930-931 MHz band services should deter speculation, trafficking, and unqualified applicants.

- ***AMS Licensing Procedures Should Favor Committed, Experienced Applicants.*** AMS licenses should awarded only to those applicants that will rapidly extend the benefits of AMS to the public.

As shown below, Mtel believes its proposed rules, which are an adaptation of the rules included in its original NWN petition, appropriately reflect these concerns, and thus serve as a suitable starting point for developing AMS rules.

AMS Rules Should Encourage Spectral Efficiency. Spectral efficiency should weigh heavily in the Commission's analysis of whether a particular proposed use of AMS spectrum should be authorized. Mtel believes the Commission should assess factors that include the size of the initial demand for spectrum, ability to accommodate subscriber growth, the efficiency of the transmission and modulation schemes, and the efforts undertaken by the licensee to maximize the utility of the spectrum granted (*i.e.*, the applicant's use of intelligent network features to minimize instances when spectrum must be used and to allow frequency re-use). Mtel's proposed rules provide two specific means of assuring that only

spectrally efficient systems are authorized. First, these factors have been identified as comparative criteria that would be used to evaluate competing demands. Second, Mtel's proposed rules channelize the 930-931 MHz band into discrete 50 kHz channels, with a presumption that no applicant receive more than one channel. In this manner, it would be possible for a provider to be allocated a 100 kHz channel, for example, although the Commission would have to be satisfied that the proposed use of the channel offered a higher spectral efficiency that two providers using 50 kHz channels.

AMS Rules Should Promote Competition. Virtually every pending petition has rightfully extolled the virtues of competition and provided multiple entry opportunities.[23] To maximize AMS competition, Mtel suggests that the 930-931 MHz band be channelized into 50 kHz segments that are available for licensing to any applicant proposing a qualifying advanced messaging service. In this manner, competitive entry opportunities would exist for multiple providers for any service successfully demonstrating public acceptance, but system designers would not be constrained to a particular system architecture already proposed or to be proposed in the future. At the same time, comparative evaluation of the similarity of a proposed use of a channel with existing uses would provide a check to ensure that not all AMS channels are used for the same type of service. Tentatively, Mtel believes that no more than three providers should be licensed for any given service architecture.

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[23] The benefits of a competitive market structure have been noted by the Commission on numerous occasions. *See, e.g., Cellular Communications Systems*, 86 F.C.C.2d 469, 474 (1981); *Multipoint Distribution Service*, 45 F.C.C.2d 616, 622 (1974). Indeed, the Commission has previously adopted a competitive market structure for nationwide messaging services in the 931-932 MHz band. *928-941 MHz Allocation Order*, 89 F.C.C.2d 1337 (1982).

AMS Rules Should Mandate Enhanced Messaging Capabilities. Channels dedicated for "advanced messaging services" should be used only for services that provide enhancements over existing services. Mtel has proposed that the service proponent explicitly identify the claimed enhancement in the license application. The degree of added functionality would then be used as part of the comparative criteria used to evaluate competing requests for spectrum. In this manner, the Commission could ensure that a broad range of enhanced messaging services become available to the public and that innovation is not hampered.

AMS Rules Should Allow Licensees to Self Designate Their Regulatory Status. Mtel also believes that competition would be enhanced by allowing providers to opt for private carrier status much like multipoint distribution service licensees under Part 21 of the Commission's Rules. As the Commission noted in adopting a shared allocation for MMDS, "a flexible approach [allowing both private and common carriers] is the best method to . . . stimulate technological innovation, lower rates, increase diversity in the marketplace, and offer the public flexibility in meeting its communications needs."[24] The application-independent nature of the proposed AMS transmission schemes will allow carriers extensive flexibility to design custom systems for individual users that should appropriately be treated as private carriage. Accordingly, Mtel included in its proposed rules a provision that permits a carrier to opt for non-common carrier status during the licensing process.[25] In order to

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[24] *MDS Election Order*, 2 FCC Rcd 4251, 4252 (1987). *See also Norlight*, 2 FCC Rcd 5167 (1987) ("[I]t has been our experience that minimally regulated private carriers are a beneficial addition to the telecommunications industry.")

[25] *See* Proposed Rule 22.1201.

guarantee minimum service qualifications and to ease administrative burdens, however, Mtel's proposed rule requires all carriers to demonstrate eligibility for common carrier licensing under Part 22.

AMS Power Limits Should Permit the Use of Diverse Technologies. Mtel believes that the FCC should affirmatively encourage the messaging industry to continue to innovate by adopting a technical framework that guarantees coexistence between services without "locking in" specific technologies. In this manner, the services deployed in the advanced technology paging reserve band will continue to evolve as customers' needs and technology change. In order to provide licensees with the ability to use the broadest range of technologies available, Mtel suggests adopting a 3500 watt ERP maximum power limitation for base transmitters, which is consistent with existing messaging services.[26] For two-way proposals, including Mtel's own NWN service, power limits are also needed for mobile transmitters. Since mobile units typically will be wide ranging, yet need adequate power to ensure reliable communications, Mtel suggests 7 watts ERP as an appropriate limitation.[27]

AMS Technical Rules Should Offer Flexible Protection Against Out-of-Band Emissions. Mtel's original rules proposal attempted to provide a technical framework that guarantees coexistence between services by adopting a channelization plan, power limitations, and an emissions mask designed simply to ensure that adjacent services do not mutually interfere. Recognizing, however, that Mtel's technical rules were designed with high power, wide area NWN systems in mind, Mtel's proposed emissions mask may be too stringent for

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[26] *See* Proposed Rule 22.1204.

[27] *See* Proposed Rule 22.1204.

all AMS services. Thus, the Commission may wish to solicit comments on a second emissions mask -- or even multiple masks -- appropriate for low powered systems. Such a scheme would limit total out-of-band energy without preferring a specific technology.[28]

AMS Rules Should Discourage Speculation. Any licensing and service rules adopted for advanced messaging services in the 930-931 MHz band should reflect lessons learned through previous licensing problems occurring in the land mobile radio services. In particular, the FCC should adopt rules for the 930-931 MHz band designed to limit speculation, warehousing, and trafficking. Mtel's proposed rules protect against those applicants seeking authorizations for reasons other than providing service by:

- Providing stringent threshold qualifications requirements to limit mass-marketed applications for AMS services;[29]
- Proposing rules with strict antitrafficking regulations to limit the speculative value of AMS licenses;[30] and,
- Scheduling construction benchmarks to ensure timely delivery of AMS to the public and guard against spectrum warehousing.[31]

Mtel submits that prior experiences in nationwide paging, narrowband private land mobile, and cellular licensing compel adoption of the most stringent anti-speculation rules.

AMS Licensing Procedures Should Select the Most Qualified and Experienced Applicants. AMS services can and should be deployed promptly and services initiated to the public expeditiously. In order to accomplish this goal, Mtel believes that licensing

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[28] *See* Proposed Rule 22.1206.

[29] *See* Proposed Rule 22.1213.

[30] *See* Proposed Rule 22.40.

[31] *See* Proposed Rule 22.43.

procedures are needed that avoid the regulatory delays inherent in previous comparative hearings but still ensure selection of the most qualified applications. Accordingly, Mtel has proposed an expedited procedure for comparative hearings that will permit an adversarial inquiry into each applicant's qualifications without delaying service to the public.[32] Mtel also has proposed specific comparative criteria for evaluation, including, among other things, the applicant's ability to bring service to the public expeditiously, the enhancements offered by the proposed service, the spectral efficiency of the service, the experimentation done by the applicant, and the level of coverage the applicant seeks to provide. Using Mtel's criteria and expedited hearing procedures, the Commission will ensure that only qualified and dedicated applicants are selected to receive licenses and that service to the public will not be delayed.

V. CONCLUSION

Mtel and other AMS proponents have provided the Commission with the groundwork for a revolution in wireless communications by proposing a wide variety of needed new services for the public. These proposals contemplate a wide range of next generation messaging services that can be implemented immediately upon the release of the 930-931 MHz advanced technology paging reserve band. The principles and rules proposed by Mtel provide the Commission with a framework to accommodate innovative services quickly and

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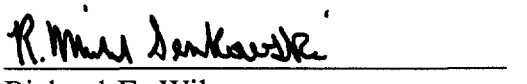
[32] *See* proposed rule 22.1216.

simply. Mtel respectfully urges the Commission to seize this opportunity and expeditiously issue a Notice of Proposed Rulemaking to adopt service rules for the 930-931 MHz band.

Respectfully submitted,

MOBILE TELECOMMUNICATION
TECHNOLOGIES CORPORATION

By: 

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Dated: June 1, 1992

CERTIFICATE OF SERVICE

I, Kim Riddick, hereby affirm that on this 1st day of June, 1992, I have caused copies of the foregoing "Comments of Mobile Telecommunication Technologies Corporation" to be delivered, First Class Mail, postage pre-paid, to the following, except where service by hand is indicated:

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TAB A

APPENDIX A
Proposed Rules for AMS

Additions are underlined (e.g. new)
Deletions are struck out (e.g. ~~old~~)

PART 22--PUBLIC MOBILE SERVICE

Subpart A--General

§ 22.2 Definitions

. . .

Advanced messaging service. A radio service providing data and messaging transmission capability between a network of base stations and portable user terminals that offers an enhancement over paging service.

. . .

Subpart B--Applications and Licenses

GENERAL FILING REQUIREMENTS

. . .

§ 22.9 Standard application forms and permissive changes or minor modifications for the public mobile service.

. . .

(e) *Advanced Messaging Service Applications.* The rules listed above do not apply to licensees and applicants in the advanced messaging service. Instead, the following rules shall apply to advanced messaging service licensees and applicants:

(1) *Application for a new license in the advanced messaging service.* Applications for an initial license in the advanced messaging service shall be made on FCC Form 401.